

POPE of Major Schemes Summary Report

Scheme Title	M62 J25-30 Smart Motorway – One Year After
Opening Date	October 2013
POPE Stage	One Year After

Scheme Description

M62 J25-30 Smart Motorway is a Highways England scheme to improve 15 miles (24.5km) of the motorway south of Bradford and Leeds by providing additional capacity. This has been provided as follows:

- Dynamic Hard Shoulder Running on J26 – 27 – 28 both directions and J29 – 30 eastbound
- Controlled All Lane Running on J25 – 26 both directions and J29 – 30 westbound
- Controlled motorway on J28 – 29 both directions

The scheme was fully opened to traffic in October 2013.

Scheme Objectives

Objectives <i>(stated in the Client Scheme Requirements)</i>	Objective Achieved?
To provide additional motorway capacity, making best use of existing infrastructure where possible	✓
To reduce the number and severity of accidents per vehicle-kilometre	✓ Too soon to assess severity
To minimise the detrimental effects on traffic on the surrounding road network where possible	✓
To improve journey time reliability, as measured by the average delay experienced in the worst 10% of journeys	✓
To improve journey times	Improved during peak period but not in inter-peak
To offset the detrimental environmental effects of the scheme through mitigation measures where technically and economically feasible	✓
To improve the quality of information provided to drivers about the state of traffic flow in the motorway	✓

Summary of Scheme Impacts

Key Findings

- Traffic flows have increased although not to the levels expected, which is most likely due to the economic downturn. Consequently, congestion levels are lower than expected, meaning that the use of the Variable Mandatory Speed Limit (a Smart Motorway feature) has led to reduced average speeds and a slight worsening of journey times in some time periods.
- In the opening year, as predicted, journey times have improved during the peak periods, but worsened outside of the peak periods.
- Reliability as measured by how widely journey times vary, has improved in the most congested weekday periods.
- Safety has improved significantly on the M62 with the collision rate shown to have fallen by over one-third, and this is better than expected.
- Forecasts expected a negligible improvement in journey times in the opening year. Larger journey time benefits were expected in later years with traffic growth leading to increased congestion. This trend of benefits increasing from negligible benefit in the opening year to a significant benefits by 2031 means that at this stage it is too soon to confidently evaluate the long term economic benefits.

Traffic

Flows

- M62 J26-27, the busiest section of the motorway within the scheme has seen weekday traffic flows increase from 146,000 to 155,000 vehicles per day.
- Traffic growth on the M62 and adjacent motorways is in line with the rate forecast, although overall numbers are lower due to there being lower than expected traffic levels before the start of works in 2011 which coincided with the economic situation at that time.
- Major roadworks on the adjacent M1 may have led to some rerouting affecting the traffic flows on the M62 west of the M1.
- As a result of lower than forecast traffic flows on the scheme section, congestion is less than expected.

Operation of Smart Motorway

- Dynamic Hard Shoulder Running (DHSR) is in operation (speed limits reduced, hard shoulder open) on J26-27 and J27-28 during the majority of the weekday peak periods and up to 23% of the inter-peak.
- Where congestion was evident before scheme opening, the DHSR has had a positive impact on journey times, however at times of low congestion, e.g. in the inter-peak period, the DHSR has had a negative impact on average journey times due to traffic being limited to a maximum speed of 60mph, sometimes unnecessarily.
- Lane occupancy data shows that in the peak periods in the two sections with DHSR, J26-27 shows that the hard shoulder has a similar level of vehicle use as the other 3 lanes, whereas the section J27-28 has a very low level of use of the hard shoulder by traffic when open. This applies to both carriageways. The low level of hard shoulder usage on J27-28 is linked with issues at J27.

Journey Times

- Significant journey time savings are observed in the AM and PM peak periods.
- The greatest savings are seen for the westbound traffic in the PM peak where there are savings of between 40 seconds and over 3 minutes on each of the sections from J29 to J26. Eastbound journey times show the highest savings in the AM peak.

- Inter-peak and off-peak periods show increased journey times which can be explained by the traffic growth and the setting of the speed limit to 60mph or slower for some of the time in the inter-peak. Although there has been some traffic growth in these time periods, the hard shoulder is infrequently open.
- The traffic flow is now smoother in the peak periods on the busiest sections as demonstrated by the fact that traffic in all lanes travels at similar speeds.

Journey Times Forecasting

- AM and PM peak periods were forecast to have journey time savings overall and on most individual sections of the M62, the AM forecasts were fairly accurate whereas the PM less so.
- Inter-peak journey times were predicted to increase slightly in the opening year and the observed data shows that this has occurred as expected.
- The forecast was that, over all time periods there would be only a small net benefit in the opening year, but that by 2031 with the scheme, savings would be experienced throughout the day. However, small benefits in observed time savings are seen in the first year, which is better than expected.
- The forecast of benefits increasing from virtually zero in the opening year to a significant benefits within 10 years means that at this stage it is too soon to confidently evaluate the long term economic benefits based on only one year's data.

Reliability

- Journey times over the full length of the scheme on weekdays in all time periods and both directions have shown a reduction in the variation of times which indicates an improvement in journey time reliability.
- Peak periods on weekdays show substantial reductions in the extreme slowest journey times.
- Reliability for the worst 10% of journeys in the AM and PM peak periods has improved in both directions.

Safety

- Analysis of data for collisions which resulted in injury before and after the scheme was built has shown that the annual average number of collisions on the M62 between J25-30 has decreased by 34% (22.8 collisions per year) post opening. This change is statistically significant, and although only based on one year of post opening data, suggests that the scheme has had a direct impact on safety post opening.
- Since scheme opening, there has been a marginal increase in severity of collisions, although this is generally due to a large decrease in the number of slight collisions, rather than an increase in fatal and serious collisions.
- Collision rates taking into account changes in traffic along the M62, have also decreased (by 36%), suggesting that even with the increase in traffic, safety has improved. This change is statistically significant, and although only based on one year of post opening data, suggests that the scheme has had a direct impact on safety post opening.

Environment

- Localised noise increases were expected around J28, with or without the scheme, although observed traffic flows are lower than predicted for the year 2015 so the noise increase may be lower than expected.
- The M62 highway corridor is known to be of low value habitat. Biodiversity impacts are being mitigated through mixed planting which at this stage has yet to establish fully.
- Overall the impact on landscape is as expected, although it is noted that the erection of visual fencing near to some residential areas is a positive addition.

- Greenhouse gas emissions have increased by 4% in the opening year with the scheme but this is only half the forecast increase. In the longer term, it is still expected that the impact of the scheme will be a net reduction in carbon emissions.
- Overall, the impact on landscape is as expected, although the erection of fencing near to some residential properties is a positive addition to visual screening for local properties.

Accessibility and Integration

- There has been no change to severance impact of the motorway for pedestrians and other non-motorised users, and the scheme is aligned with relevant local, regional and national policies.

Summary of Scheme Economic Performance

All monetary figures in 2002 Prices and values, discounted		Forecast	Outturn Reforecast
Present Value Benefits	Journey Times	£729.9m	n/a
	Vehicle Operating Costs (VOC)	£-29.3m	£-24.1m
	Construction and maintenance delay	£-44.0m*	
	Safety	£33.8m	£59.3m
	Indirect Tax	£19.7m	£16.2m
	Other (noise, carbon)	£18.9m*	
	Total PVB	£729.1	n/a
Present Value Costs including operating costs (PVC)		£147.7m	£122.4m
Benefit Cost Ratio (BCR)		4.9	n/a

*Assumed to be as forecast

- An outturn BCR has not been calculated due to the difficulty in evaluating the journey time benefits at the OYA stage.
- Benefits from journey time savings were forecast to be large and provide the majority of the monetised benefits. It has not been possible to re-forecast the long term benefits based on the opening year results because the forecasts quoted low benefits in the first year but rising significantly in later years, hence at this stage it is too early to be confident about this trend. However, it is encouraging that actual journey time benefits in this first year are greater than those forecast.
- The monetary benefits of the savings in the number of injury collisions is evaluated as £59m over 60 years, nearly double that forecast despite excluding the impact of background reduction in collisions over this period from the benefits.
- The investment cost of building the scheme was £95.9m, 17% lower than forecast in 2011.
- Long term costs for Highways England of operating the smart motorway are assumed to be as forecast at £39m and are included in the overall costs.
- The original assessment forecast incident reliability benefits of £180m, but this figure was not included in the overall forecast benefits or BCR. A reforecast incident reliability benefit of £181.2m has been calculated. If journey time reliability is included in the BCR the outturn BCR would be 1.7 (excluding any potential journey time benefits), meaning the scheme would be considered medium value for money.

This document summarises the findings of the One Year After (OYA) post opening evaluation study published in 2016.